REMARKS

Claims 1-24 are all the claims pending in the application.

I. Response to Rejections Under 35 U.S.C. § 103

a. In Paragraph No. 2 of the Action, claims 1-6, 8-12 and 21-24 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kodama et al (EP 1179750) ("EP '750").

Applicants respectfully traverse the rejection for the following reasons.

As set forth in the Amendment previously filed on October 17, 2005, EP '750 discloses several embodiments for a positive photoresist composition, including:

(i) a composition comprising a photoacid generator (A), a resin (B) containing a monocyclic or polycyclic alicyclic hydrocarbon structure and increasing its solubility to an alkali developer by the action of an acid, an onium salt (C) of a carboxylic acid, and, optionally, an acid-decomposable dissolution-inhibiting compound (D) (Abstract; Paragraph No. [0188]);

(ii) a composition comprising a photoacid generator (A), an onium salt (C) of a carboxylic acid, an acid-decomposable dissolution-inhibiting compound (D) and a resin (E), wherein resin (E) is alkali-soluble, contains a monocyclic or polycyclic alicyclic hydrocarbon structure and does not contain an acid-decomposable group (Paragraph Nos. [0015]-(18), [0188] and [0202]); and

(iii) a composition comprising a photoacid generator (A), a resin (B), an onium salt (C) of a carboxylic acid and a resin (E), wherein resin (E) is water-insoluble and alkali-soluble, and does not contain an acid-decomposable group (Paragraph No. [0205]).

Embodiment (iii) of EP '750: As set forth in the Amendment, the composition of embodiment (iii) of EP '750 is different from the present invention in that it does not contain a compound which corresponds to component (B) of the present invention. See page 22 of the Amendment.

Embodiment (ii) of EP '750: In the composition of embodiment (ii) above, resin (E) does not meet the requirements of component (D1) or (D2) of the present invention. Specifically, EP '750 does not describe or suggest that resin (E) may contain a phenol skeleton, as required for component (D1) of the present invention. Further, resin (E) of EP '750 is alkali-soluble and thus is not a resin capable of increasing its solubility in an alkali developer by the action of an acid, as required for component (D2) of the present invention.

The Examiner relies on the description in Paragraph No. [0206] of EP '750 as teaching the use of a novolak (phenolic) resin having a molecular weight of between 1000 to 20,000 (page 4, lines 6-7 of the Office Action).

However, the portion relied upon by the Examiner refers to only embodiment (iii) of EP '750, i.e., the composition comprising components (A), (B), (C) and (E), as stated in the preceding Paragraph No. [0205]. Moreover, resin (E) used in embodiment (ii), i.e., the composition comprising components (A), (C), (D) and (E), is described in Paragraph No. [0202] and [0203], to be a resin containing a carboxy group, e.g., a copolymer of methacrylate

containing an alicyclic hydrocarbon structure which does not contain an acid-decomposable group and (meth)acrylic acid, or a resin of (meth)acrylate containing an alicyclic hydrocarbon structure having a carboxy group at the terminal thereof.

Embodiment (i) of EP '750: The present claims require that the 1/2 wave of the oxidation potential of the active seed generated from the compound (B) (E_{pa}) is less than the 1/2 wave of the reduction potential of the active seed generated from the compound (C) (E_{pc}), i.e., $E_{pc} - E_{pa} > 0$.

However, EP '750 does not describe or suggest E_{pa} of compound (D), which may correspond to the compound (B) in the present invention, or E_{pc} of PAG (A), which may correspond to the compound (C) in the present invention, let alone the relationship that $E_{pc} - E_{pa} > 0$.

The Examiner asserts that "[EP '750] discloses compound meeting the limitations of compound (B), as well as the claimed relationship." The Examiner further points out that PAG 4-30 of EP '750 is "compound 3" [sic, C-1] described on page 79 of the present specification. See page 4, lines 2-5 from the bottom of the Office Action.

However, the presently recited relationship, $E_{pc} - E_{pa} > 0$, is a limitation independent from the requirements for component (C). The Examiner does not explain how the claimed relationship is met.

In this regard, Applicants wish to submit the following explanation.

One feature of the present invention resides in the existence of the relationship E_{pc}-E_{pa}>0 between Components (B) and (C). In order to satisfy this relationship, E_{pc} needs to be shifted toward a more positive side. Thus, it is necessary to select the appropriate structure of the cationic part in the case of an onium salt, so as to satisfy the required numerical value.

In other words, it is not correct that any onium salt is applicable in the present invention; instead, by taking into consideration the relevant numerical values, an appropriate onium salt must be chosen.

Accordingly, Applicants respectfully submit that the present claims are not obvious over EP '750.

Further, the Examiner asserts that many carboxylic anions described in EP '750, such as compound II-1, meet the limitations of Ra-Rc-O^- where Ra is CH_3 and Rc is CO. See page 4, line 2 from the bottom to page 5, line 4 of the Office Action.

Applicants respectfully disagree. Present claim 5 recites that Ra represents a hydrogen atom, a substituted or unsubstituted C_6-C_{16} aryl group, a substituted or unsubstituted C_1-C_{20} straight-chain, branched or cyclic alkyl group, -COO^- or $-SO_3^-$; and Rc represents CH_2, CHRa or $C(Ra)_2$. However, Rc is <u>not</u> a CO group. Thus, compound II-1 of EP '750, i.e., $Ph_3S^+CH_3COO^-$, as well as other compounds described on the page, do not meet the limitations of Ra-Rc-O^- as recited in present claim 5. For this reason additionally, Applicants traverse the rejection of claim 5.

Moreover, the Examiner asserts that compound II-62 of EP '750 meets the limitations for the instant formula (VIII). See page 2, line 2 from the bottom of the Office Action.

Applicants note that claim 7 which recites formula (VIII) is not included in this rejection. Moreover, the two S^{+}'s in compound (II-62) of EP '750 do not lie in the same conjugate system and thus compound (II-62) of EP '750 does not fall within the scope of formula (VIII) recited in present claim 7.

In addition, the Examiner does not rebut Applicants' position that none of the acid-decomposable dissolution-inhibiting compounds disclosed on pages 81 and 82 of EP '750 and relied upon by the Examiner is a phenol derivative, contains a vinyl ether structure, or is a cyclic ether compound as recited in present claims 8-10. Applicants continue to traverse the rejection of claims 8-10 on this ground additionally.

In view of the foregoing, Applicants respectfully submit that the present claims are not obvious over EP '750, and thus the rejection should be withdrawn.

b. In Paragraph No. 3 of the Action, claims 7 and 17-20 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over EP '750 in view of Sinta et al (U.S. Pat. No. 5,731,364).

Applicants respectfully traverse the rejection for the same reasons as set forth above. In addition, Sinta et al does not rectify the deficiencies of EP '750. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

c. In Paragraph No. 4 of the Action, claims 1-24 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kobayashi et al (U.S. Pat. No. 6,136,500) in view of Sinta et al.

Applicants respectfully traverse the rejection for the following reasons.

As set forth in the Amendment previously filed on October 17, 2005, Kobayashi et al discloses a positive radiation sensitive resin composition comprising (A)(a) an acid-decomposable group-containing resin, or (b) an alkali-soluble resin and an alkali dissolution controller, and (B) a photoacid generator comprising a compound that upon exposure to radiation generates a carboxylic acid having a boiling point of 150 degrees C or higher, and a compound that upon exposure to radiation generates an acid other than a carboxylic acid. Kobayashi et al also discloses a negative type radiation sensitive resin composition comprising (C) an alkali-soluble resin, (D) a cross-linking agent, and the component (B) (Abstract). See pages 26-27 of the Amendment.

Positive type resin composition of Kobayashi et al: The positive type resin composition of Kobayashi et al differs from the present invention comprising components (A), (B), (C) and (D2) in that it does not contain a compound which corresponds to component (B) of the present invention.

Negative type resin composition of Kobayashi et al: As pointed out above, the presently recited relationship, $E_{pc} - E_{pa} > 0$, between components (B) and (C), is a limitation independent from the requirements for component (B) or (C). The Examiner does not assert that the composition of Kobayashi et al meets the claimed relationship.

Further, the Examiner does not rebut Applicants' position that Kobayashi et al does not disclose or suggest a cross-linking agent which is a phenol derivative containing from 1 to 10 benzene ring atomic groups per molecule and having at least one hydroxymethyl group and at least one alkoxymethyl group per molecule, or a cross-linking agent containing vinyl ether groups, as recited in present claims 8 and 9, respectively.

In addition, Sinta et al does not rectify the deficiencies of Kobayashi et al.

In view of the foregoing, Applicants respectfully submit that the present claims are not obvious over the cited references, and thus the rejection should be withdrawn.

II. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any

overpayments to said Deposit Account.

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